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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,698	03/09/2001	Johan Soderberg	032559-077	6898

27045 7590 12/21/2004

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EXAMINER	
ABRAHAM, ESAW T	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/802,698	SODERBERG ET AL.	
	Examiner	Art Unit	
	Esaw T Abraham	2133	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims **1-57** are presented for examination.

****** The examiner considers the preliminary amendment filled on 03/09/01.

Priority

2. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 119 (e) (provisional application # 60/244,369) filed on 10/30/2000.

Information Disclosure Statement

3. The applicant's IDS of 09 SEP, 2001 have been entered. The examiner considers the IDS.

Claim Rejections - 35 USC § 101, Non Statutory

4. Claims 1-28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter because:

The language of the claim **(as in claims 1-57)** raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C 101.

For example: A bit error resilience system and a method for an IP stack having functionality comprising the steps of analyzing packets and forwarding header packets with detected errors (as in claims 1 and 29) and a system and a method for protecting header information in header compressed packets comprising the steps of selecting a first of the

compressed header and protecting a second subset of compressed header (as in claims 22 and 50) are directed to mathematical algorithm not embedded in computer readable medium.

Claims 2-21, 23-28, 30-49 and 51-57 are directly or indirectly dependents of claims 1, 22, 29 and 50 are also rejected under 35 U.S.C. 101.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere* CO., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims **1-57** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koodli (6,608,841).

As per claims **1 and 29,** Koodli teach or disclose a data compression/decompression in a data network and more particularly, relates to a system and method for achieving robust IP/UDP/RTP header compression in the presence of unreliable networks (see col. 1, lines 1-15). Koodli teaches a robust IP/UDP/RTP header compression mechanism and technique that can correctly reconstruct IP/UDP/RTP headers in the presence of packet losses and errors whereby

the header compression mechanism includes a compressor/de-compressor (header compression analyzer) implemented for operation similarly to RFC 2508 but designed specifically to address robustness when employed in lossy and error-prone networks to correctly reconstruct headers in the presence of packet losses and errors (see col. 3, 31-40). Further, Koodli in FIG. 2A show an example of data packet (100) consists of a segment of data payload (130) and a small header (120) whereby the header segment (120) contains, for example, IP addresses fields (32-bit global Internet address, generally consisting of a network identifier and a host identifier), a version field used to specify which version of the IP is represented in the IP packet (for example, IPv4 and IP v6), a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 39-65). Koodli **does not explicitly teach** forwarding a header-compressed packet with a checksum by a forwarding means. **However,** Koodli in figure 1 teaches a source terminal (20) comprising a host (22) generates data which is forwarded to the network interface controller (NIC) (24) and the NIC (24) of the source terminal (20) transforms incoming data from host (22) into data packets using, for example, Real-Time Transfer Protocol (RTP) used on top of User Datagram Protocol (UDP/IP), and injects the data packets via the bandwidth-limited link 10 and further the IP-based network (10) accepts incoming data packets and forwards the same to destination terminal (30) according to the information contained in the header (see col. 5, lines 21-37) which Koodli is basically teaching the same as the applicant's invention for routing or forwarding header compressed packets. **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to route or forward header compressed packets from a source to a destination as taught by Koodli. **This**

modification would have been obvious because a person having ordinary skill in the art would have been motivated in order to enhance link or channel performance.

As per claims **2 and 30,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54).

As per claims **3-6,** Koodli teach the header compression mechanism includes a header compression mechanism is implemented to correctly reconstruct headers of said packets in the presence of packet losses and errors (see claim 18).

As per claims **7 and 35,** Koodli teach a robust IP/UDP/RTP header compression mechanism and technique that can correctly reconstruct IP/UDP/RTP headers in the presence of packet losses and errors. The header compression mechanism includes a compressor/de-compressor implemented for operation similarly to RFC 2508 but designed specifically to address robustness when employed in lossy and error-prone networks to correctly reconstruct headers in the presence of packet losses and errors (see col. 3, lines 31-40).

As per claim **8, 9, 36 and 37,** Koodli teach that headers are IP/UDP/RTP headers used for real-time communications on the Internet and for applications such as Voice over IP and Video conferencing (see claim 9).

As per claims **10, 12 and 14,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54).

As per claims **11 and 39,** Koodli in figure 5A teach a header format of a data packet when a second-order (SO) difference is zero and the header segment 120 of a data packet 100

(see FIG. 2A) may include a 4-bit context identifier (ID) field (which is the same as described in RFC 2508 and may be implicit and optional in certain networks such as cellular networks) and a 4-bit sequence number field (see col.9, lines 38-53).

As per claims **13 and 41,** Koodli teaches a version field used to specify which version of the IP is represented in the IP packet (for example, IP Version 4 and IP Version 6), a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error. Other IP fields such as flags and fragment offset fields, a total length field, an ID field, a time to live field and a protocol field may also be included in such a header and in the Internet Protocol version 4 (IPv4), header fields including IP/UDP/RTP may occupy 40 bytes per packet, and 60 bytes per packet for Internet Protocol version 6 (IPv6) (see col. 5, 38-65).

As per claims **15 and 16,** Koodli teaches a header compression mechanism includes a compressor/de-compressor implemented for operation similarly to RFC 2508 but designed specifically to address robustness when employed in lossy and error-prone networks to correctly reconstruct headers in the presence of packet losses and errors (see col. 3, lines 31-40).

As per claims **17 and 45,** Koodli teaches that when the context state is established, the compressor 26 of source terminal 20 need not send the first-order differences (especially those corresponding to RTP header fields, for example, such as RTP timestamp and RTP sequence number) unless the second-order difference (delta) is non-zero and when the second-order difference (delta) of the RTP header (or IP/UDP header of a data packet) from packet to packet is zero, the de-compressor 36 of destination terminal 30 may reconstruct a packet without any loss of information by simply adding the first-order differences to the saved uncompressed

header representing the previous packet as each compressed packet is received (see col. 7, lines 5-16).

As per claims **18, 19, 46 and 47,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54).

As per claims **20-21 and 48-49,** Koodli teaches all the subject matter claimed in claims 1 and 29. Kooldi **does not teach** that a framing protocol PPP and a HDLC protocol. **Nevertheless,** as would have been well known to one ordinary skill in the art at the time the invention was made, such protocols for example, Point-to-Point Protocol, is a network level protocol required in wide usage today that enables general-purpose computers to communicate over certain packet switched networks. **Accordingly,** it would have been obvious to one ordinary skill in the art to include such protocols in order to communicate over packet switched networks.

As per claims **22 and 50,** Koodli teaches all the subject matter claimed in claims 1 and 20 including Koodli teaches that for Internet Protocol (IP) based real-time multimedia, RTP may be used on top of User Datagram Protocol (UDP/IP) to make use of multiplexing and checksum services (see col. 1, lines 27-30).

As per claims **23 and 51,** Koodli in figure 5A teach a header format of a data packet when a second-order (SO) difference is zero and the header segment 120 of a data packet 100 (see FIG. 2A) may include a 4-bit context identifier (ID) field (which is the same as described in RFC 2508 and may be implicit and optional in certain networks such as cellular networks) and a 4-bit sequence number field (see col.9, lines 38-53).

As per claims **24 and 52,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54).

As per claims **25-27,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54). Further, Koodli teaches a version field used to specify which version of the IP is represented in the IP packet (for example, IP Version 4 and IP Version 6), a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error. Other IP fields such as flags and fragment offset fields, a total length field, an ID field, a time to live field and a protocol field may also be included in such a header and in the Internet Protocol version 4 (IPv4), header fields including IP/UDP/RTP may occupy 40 bytes per packet, and 60 bytes per packet for Internet Protocol version 6 (IPv6) (see col. 5, 38-65).

As per claims **28 and 57,** Koodli teaches header compression mechanism includes a compressor/de-compressor implemented for operation similarly to RFC 2508 but designed specifically to address robustness when employed in lossy and error-prone networks to correctly reconstruct headers in the presence of packet losses and errors (see col. 3, lines 31-40).

As per claims **31-34,** Koodli teach the header compression mechanism includes a header compression mechanism is implemented to correctly reconstruct headers of said packets in the presence of packet losses and errors (see claim 18).

As per claims **38, 40, and 42,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54).

As per claims **43 and 44,** Koodli teaches a header compression mechanism includes a compressor/de-compressor implemented for operation similarly to RFC 2508 but designed specifically to address robustness when employed in lossy and error-prone networks to correctly reconstruct headers in the presence of packet losses and errors (see col. 3, lines 31-40).

As per claims **53-56,** Koodli teach a type of service field used to specify how the IP packet is to be handled in IP-based networks, which offer various service qualities, and a header checksum field used to verify transmission error (see col. 5, lines 50-54). Further, Koodli teaches a version field used to specify which version of the IP is represented in the IP packet (for example, IP Version 4 and IP Version 6), a type of service field used to specify how the IP packet is to be handled in IP-based networks which offer various service qualities, and a header checksum field used to verify transmission error. Other IP fields such as flags and fragment offset fields, a total length field, an ID field, a time to live field and a protocol field may also be included in such a header and in the Internet Protocol version 4 (IPv4), header fields including IP/UDP/RTP may occupy 40 bytes per packet, and 60 bytes per packet for Internet Protocol version 6 (IPv6) (see col. 5, 38-65).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,711,164 Le et al.

US PN: 6,721,333 Milton et al.

7. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

Esaw Abraham

Art unit: 2133

ALBERT DECADY
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